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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/500,194

06/24/2004

Takamasa Harada

2002DE301

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7590

05/29/2007

AZ ELECTRONIC MATERIALS USA CORP.
ATTENTION: INDUSTRIAL PROPERTY DEPT.
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EXAMINER

WYROZEBSKI LEE, KATARZYNA I

ART UNIT

PAPER NUMBER

1714

MAIL DATE

DELIVERY MODE

05/29/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/500,194

Applicant(s)

HARADA ET AL.

Examiner

Katarzyna Wyrozewski

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/21/05;06/24/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

Use Claims

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 9 provides for the use of nanocomposite, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Additionally, 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Thus, claims 9 is also rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

In order to overcome this rejection, it is advised that the applicant change the "use for" language in claims 1-8 to "process of using".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-6, 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by SCHMIDT (US 6,236,493).

The prior art of SCHMIDT discloses coating composition for making a transparent film for articles such as optical lenses.

Nanoparticles of SCHMIDT have particle size of not more than 20nm (col. 2, lines 65-67). Particles include oxides such as silica, titania, zirconia; sulphides, halides, zirconates, aluminates, stannates, phosphates, nitrides and the like. Nanoparticles can be utilized in amount of 1-50 % by weight (coll. 3, lines 4-15 and 32-33). The specification further teaches that the

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particles are surface modified with a suitable functional group that is either polymerizable or hydrophobic.

Polymers listed in SCHMIDT include polyacrylates, polymethacrylates, polyvinyl butyrate, polyvinyl acetate, polyepoxide and the like (col. 3, lines 51-60), wherein the composition is in liquid form.

Monomers utilized in the disclosure of SCHMIDT include acrylic monomers such as acids, esters and acrylonitrile (col. 4, lines 5-8). Examples include esters of methacrylic acid.

In addition to the polymers an inorganic compound is utilized. The inorganic compound has polycondensable groups and are preferably silanes having formula I and II (col. 4). The silanes compounds include have functional groups such as acryloxy, methacryloxy, epoxy, hydroxyl, alkoxy and the like (col. 4, lines 38-60). Examples of preferred embodiments include methacryloxypropyltrimethoxysilane, glycidyloxypropyltrimethoxysilane and the like (col. 5, lines 5-9). Polycondensation of the silane is carried in a conventional manner. Statistically speaking if the silane compound has at least one organic substituent, then the condensation will occur on at least 30 % of the total condensate. Condensation as shown in the disclosure of SCHMIDT is conducted in presence of water, which is a hydrolyzing medium. Presence of acidic or basic catalyst is also contemplated.

Additives include dyes, photochromic and thermochromic substances (col. 6, lines 19-21), substrates include glass, which further indicates that the substrate is transparent (col. 6, lines 27-30) which also includes transparent plastics. Other additives include leveling agents, UV stabilizers, photoinitiators, photosensitizers.

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Resulting composition contains refractive index gradient (Abstract and claims).

SCHMIDT teaches also that the driving force that brings about refractive index is induced by nanoscale particles embedded in the matrix that migrate within the polymeric matrix is application of electrical field, chemical potential or interface potential (col. 1). With use of electric field as the potential source, the migrating particles carry a charge. Once the migration is achieved, the matrix is cured using photo-crosslinking (inherent due to presence of photoinitiators.

In the light of the above disclosure the prior art of SCHMIDT anticipates claims rejected above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over SCHMIDT (US 6,236,493) in view of either JP 2000-302960 (Abstract) or BLANK (US 3,787,378).

The discussion of the disclosure of SCHMIDT from paragraph 4 of this office action is incorporated here by reference.

The difference between the present invention and the disclosure of SCHMIDT is recitation of softener or plasticizers since these compounds provide the same net effect.

With respect to the above difference, the prior art disclosure of JP'960 or BLANK teaches use of plasticizers. JP disclosure uses the plasticizer in amount of 1-30 wt % based on the weight of the matrix polymer while the disclosure of BLANK teaches use of up to 20 % of plasticizer based on the weight of the matrix polymer.

Plasticizers or softeners can be utilized in optical films as an optional additive depending on intended use of the final product. The plasticizers or softeners aid in the diffusion of the

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monomeric components within the polymeric matrix and may be less expensive way of lowering refractive index of the composition. At the same time adding softener or plasticizer results in the composition that is less rigid and softens at lower temperatures. So again, if someone wants a rigid lens then as claim 1 indicated softener or plasticizer is optional. If the lens or film to be produced requires some degree of flexibility then use of appropriate amounts of these additives is taught or suggested and otherwise known to those skilled in the art.

In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to utilize the softener of JP'960 or Blank in the composition of SCHMIDT and thereby obtain the claimed invention. Use of such component allows composition to become less rigid and still retain optical properties imparted by the rest of the composition.

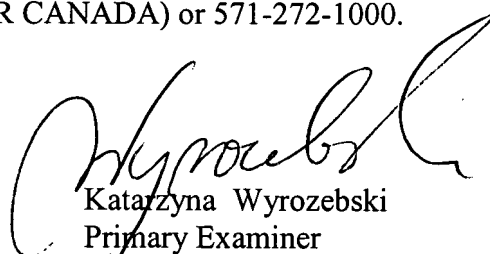
9. Following disclosures were found during the search: US 2006/0057395 to ZIMMERMANN, which disclosure is not available as a prior art for date purposes. NAKAMURA (US 7,108,810), which lacks presence of condensed silane and amount in which is it is utilized. The examiner however, reserves right to apply this prior art against present claims if such action becomes necessary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski whose telephone number is (571) 272-1127. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Katarzyna Wyrozebski
Primary Examiner
Art Unit 1714

May 24, 2007